

CLAIMS:

1. An implantable medical device comprising:
a first module that includes control electronics within a first housing;
a second module that includes a second housing; and
an overmold that at least partially encapsulates the first and second housings.
2. The implantable medical device of claim 1, wherein the second module includes a power source within the second housing that provides power to the first module.
3. The implantable medical device of claim 2, wherein the power source is rechargeable.
4. The implantable medical device of claim 3, further comprising a recharge coil that inductively receives energy to recharge the power source.
5. The implantable medical device of claim 4, wherein the recharge coil is located within the overmold and substantially encircles the first and second modules.
6. The implantable medical device of claim 4, further comprising a third module that includes a third housing that houses the recharge coil.
7. The implantable medical device of claim 6, wherein the overmold at least partially encapsulates the third module.
8. The implantable medical device of claim 7, wherein the first, second and third modules are positioned within the overmold in one of a triangular configuration and a linear configuration.
9. The implantable medical device of claim 6, wherein the third module is located outside of the overmold, the implantable medical device further comprising a flexible tether member that connects the third module to the overmold.

10. The implantable medical device of claim 9, wherein the flexible tether member comprises a helix.
11. The implantable medical device of claim 1, wherein the overmold completely encapsulates the first and second modules.
12. The implantable medical device of claim 1, wherein the overmold does not encapsulate a portion of each of the first and second modules, and each of the portions is proximate to a cranium of a patient when the implantable medical device is implanted on the cranium.
13. The implantable medical device of claim 1, wherein the overmold is flexible.
14. The implantable medical device of claim 1, wherein the overmold comprises silicone.
15. The implantable medical device of claim 1, wherein the overmold comprises at least two materials.
16. The implantable medical device of claim 1, further comprising a flexible interconnect member to couple the first and second modules.
17. The implantable medical device of claim 16, wherein the interconnect member is flexible in a plurality of directions and allows the first and second modules to have a plurality of degrees of freedom of movement relative to each other.
18. The implantable medical device of claim 1, wherein each of the first and second housings are substantially cylindrical.
19. The implantable medical device of claim 1, further comprising:

a lead connection module formed within the overmold to receive one of a lead that includes an electrode and a lead extension that is coupled to the lead; and

a conductor that extends from the lead connection module to the first module, wherein the first housing comprises a hermetic feedthrough to receive the conductor and the conductor electrically couples the electrode to the first module.

20. The implantable medical device of claim 1, wherein the first module comprises a therapy delivery circuit to deliver electrical stimulation to a patient, and the control electronics control the delivery of electrical stimulation by the therapy delivery circuit.

21. The implantable medical device of claim 1, wherein the overmold is shaped for implantation on a cranium of a patient.

22. The implantable medical device of claim 1, wherein the implantable medical device is flexible such that a shape of the implantable medical device is capable of being manipulated.

23. An implantable medical device comprising:

a first module that includes control electronics housed within a first housing;

a second module that includes a power source that provides power to the first module housed within a second housing; and

an interconnect member that flexibly couples the first and second modules.

24. The implantable medical device of claim 23, wherein the power source is rechargeable.

25. The implantable medical device of claim 24, further comprising a recharge coil that inductively receives energy to recharge the power source.

26. The implantable medical device of claim 25, wherein the recharge coil is located within an overmold and substantially encircles the first and second modules.

27. The implantable medical device of claim 25, further comprising a third module that includes a third housing that houses the recharge coil.
28. The implantable medical device of claim 27, wherein an overmold at least partially encapsulates the third module.
29. The implantable medical device of claim 28, wherein the first, second and third modules are positioned within the overmold in one of a triangular configuration and a linear configuration in which the modules are positioned substantially along a common axis.
30. The implantable medical device of claim 27, wherein the third module is located outside of the overmold, the implantable medical device further comprising a flexible tether member that connects the third module to the overmold.
31. The implantable medical device of claim 30, wherein the flexible tether member comprises a helix.
32. The implantable medical device of claim 23, wherein the interconnect member is flexible in a plurality of directions and allows the first and second modules to have a plurality of degrees of freedom of movement relative to each other.
33. The implantable medical device of claim 32, wherein the interconnect member allows the first and second modules to have at least three degrees of freedom of movement relative to each other.
34. The implantable medical device of claim 33, wherein the interconnect member is hermetic.
35. The implantable medical device of claim 23, wherein each of the first and second housings are substantially cylindrical.

36. The implantable medical device of claim 23, further comprising:
a lead connection module formed within an overmold to receive one of a lead that includes an electrode and a lead extension that is coupled to the lead; and
a conductor that extends from the lead connection module to the first module, wherein the first housing comprises a hermetic feedthrough to receive the conductor and the conductor electrically couples the electrode to the first module.
37. The implantable medical device of claim 23, wherein the first module comprises a therapy delivery circuit to deliver electrical stimulation to a patient, and the control electronics control the delivery of electrical stimulation by the therapy delivery circuit.
38. The implantable medical device of claim 23, wherein the implantable medical device is flexible such that a shape of the implantable medical device is capable of being manipulated.
39. An implantable medical device comprising:
a first module that includes control electronics housed within a first housing;
a second module that includes a power source that provides power to the first module housed within a second housing; and
a hermetic interconnect member that flexibly couples the first and second modules, wherein the interconnect member is flexible in a plurality of directions and allows the first and second modules to have a plurality of degrees of freedom of movement relative to each other.
40. The implantable medical device of claim 39, wherein the interconnect member allows the first and second modules to have at least three degrees of freedom of movement relative to each other.
41. The implantable medical device of claim 39, wherein the implantable medical device is flexible such that a shape of the implantable medical device is capable of being manipulated.

42. An implantable medical device comprising:
- a first module comprising control electronics and a therapy delivery circuit housed within a first housing, wherein the control electronics control delivery of stimulation by the therapy delivery circuit;
 - a second module comprising a power source within a second housing that provides power to the control electronics and the therapy delivery circuit;
 - an interconnect member that flexibly couples the first and second modules and includes a conductor for delivery power from the power source to the control electronics and the therapy delivery circuit; and
 - a flexible overmold that at least partially encapsulates the first and second housings.
43. The implantable medical device of claim 42, wherein the power source is rechargeable.
44. The implantable medical device of claim 43, further comprising a recharge coil that inductively receives energy to recharge the power source.
45. The implantable medical device of claim 44, wherein the recharge coil is located within the flexible overmold and substantially encircles the first and second modules.
46. The implantable medical device of claim 44, further comprising a third module that includes a third housing that houses the recharge coil.
47. The implantable medical device of claim 46, wherein the flexible overmold at least partially encapsulates the third module.
48. The implantable medical device of claim 47, wherein the first, second and third modules are positioned within the overmold in one of a triangular configuration and a linear configuration in which the modules are positioned substantially along a common axis.

49. The implantable medical device of claim 46, wherein the third module is located outside of the overmold, the implantable medical device further comprising a flexible tether member that connects the third module to the overmold.

50. The implantable medical device of claim 49, wherein the flexible tether member comprises a helix.

51. The implantable medical device of claim 42, wherein the interconnect member is flexible in a plurality of directions and allows the first and second modules to have a plurality of degrees of freedom of movement relative to each other.

52. The implantable medical device of claim 42, further comprising:
a lead connection module formed within the overmold to receive one of a lead that includes an electrode and a lead extension that is coupled to the lead; and
a conductor that extends from the lead connection module to the first module,
wherein the first housing comprises a hermetic feedthrough to receive the conductor and the conductor electrically couples the electrode to the first module.

53. The implantable medical device of claim 42, wherein the overmold is shaped for implantation on a cranium of a patient.

54. The implantable medical device of claim 42, wherein the implantable medical device is flexible such that a shape of the implantable medical device is capable of being manipulated.

55. The implantable medical device of claim 42, wherein the therapy delivery circuit comprises a pulse generator.

56. An implantable medical device comprising:
control electronics and a rechargeable power source that provides power for the control electronics within a first housing;

a recharge coil within a second housing that inductively receives energy to recharge the power source; and

a flexible tether member that connects the first and second housings.

57. The implantable medical device of claim 56, wherein the flexible tether member comprises a helix.